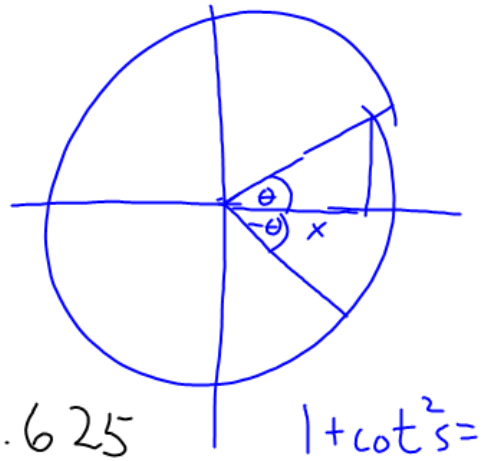
(2) $\cos x = -0.65$

$\cos(-x) = -0.65$



(3) $\tan x = 1.6$

$\cot(x) = \frac{1}{1.6} = 0.625$

$1 + \cot^2 s = \csc^2 s$

(6) $\cot s = -\frac{1}{3}$, s in q4

$\csc^2 s = 1 + \cot^2 s$

$\csc^2 = 1 + \left(-\frac{1}{3}\right)^2$

$= 1 + \frac{1}{9}$

$\csc^2 = \frac{10}{9}$

$\frac{1}{\sin^2} = \frac{10}{9}$

$\sqrt{\sin^2} = \sqrt{\frac{9}{10}}$

$\sin = \pm \frac{3}{\sqrt{10}}$

21 $\sin\theta = \frac{2}{3}$, θ in q2

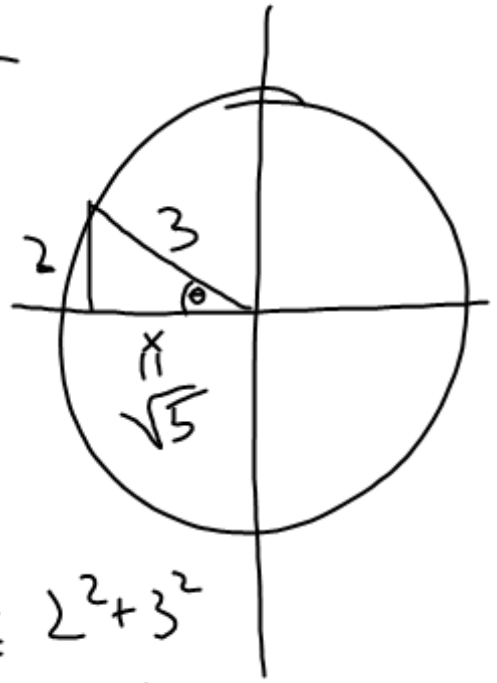
$\cos\theta = \frac{\sqrt{5}}{3}$

$\tan\theta = \frac{2}{\sqrt{5}} = \frac{2\sqrt{5}}{5}$

$\csc\theta =$

$\sec\theta =$

$\cot\theta =$



$x^2 = 2^2 + 3^2$

$x^2 = 3^2 - 2^2$

$x^2 = 9 - 4$

$x = \sqrt{5}$

(7) $\cos(-s) = \frac{\sqrt{5}}{5} = \cos(s)$, $\tan s < 0$

$\sin^2 s = 1 - \cos^2 s$

$\sin^2 s = 1 - \left(\frac{\sqrt{5}}{5}\right)^2$

$= 1 - \frac{5}{25} = \frac{25}{25} - \frac{5}{25}$

$\sqrt{\sin^2 s} = \frac{20}{25} = \sqrt{\frac{4}{5}}$

$\sin s = \pm\sqrt{\frac{4}{5}}$

$= \pm\frac{2}{\sqrt{5}} = \pm\frac{2\sqrt{5}}{5} = -\frac{2\sqrt{5}}{5}$

$$\frac{\cot s + 1}{} \stackrel{?}{=} \csc s(\cos s + \sin s)$$

illegal

$$\frac{1}{\sin}\left(\cos + \frac{\sin}{1}\right)$$

$$\frac{\cos}{\sin} + \frac{\sin}{\sin}$$

$$\cot + 1$$

#2 $\tan^2 x(1+\cot^2 x) = \frac{1}{1-\sin^2 x}$

1

1

(2) $\tan^2(1+\cot^2) = \dfrac{1}{1-\sin^2}$

$\dfrac{\sin^2}{\cos^2}\left(1+\dfrac{\cos^2}{\sin^2}\right) = \dfrac{1}{\cos^2}$

$\dfrac{\sin^2}{\cos^2} + \dfrac{\cancel{\sin^2}}{\cos^2}\left(\dfrac{\cos^2}{\cancel{\sin^2}}\right)$

$\dfrac{\sin^2}{\cos^2} + \dfrac{\cos^2}{\cos^2}$

$\dfrac{\sin^2+\cos^2}{\cos^2}$

$\dfrac{1}{\cos^2} = \dfrac{1}{\cos^2}$

(3) $\dfrac{\tan - \cot}{\sin \cos} = \sec^2 - \csc^2$

$$\frac{\tan}{\sin\cos} - \frac{\cot}{\sin\cos}$$

$$\frac{\dfrac{\sin}{\cos}}{\sin\cos} - \frac{\dfrac{\cos}{\sin}}{\sin\cos}$$

$$\frac{\sin}{\cos} \cdot \frac{1}{\sin\cos} - \frac{\cos}{\sin} \cdot \frac{1}{\sin\cos}$$

$$\frac{1}{\cos^2} - \frac{1}{\sin^2}$$

$$\sec^2 - \csc^2 =$$

4) $\dfrac{\cos}{1-\sin} = \dfrac{1+\sin}{\cos}\left(\dfrac{1-\sin}{1-\sin}\right)$

$\left(\dfrac{1+\sin}{1+\sin}\right)\dfrac{\cos}{1-\sin} =$

$\dfrac{\cos(1+\sin)}{1-\sin^2}$

$\dfrac{\cancel{\cos}(1+\sin)}{\cos^{\cancel{2}}}$

$\dfrac{1+\sin}{\cos} =$

$(1-\sin)(1+\sin)$

$1 - \cancel{\sin} + \cancel{\sin} - \sin^2$

(5) $\dfrac{\sec+\tan}{\sec-\tan} = \dfrac{1+2\sin+\sin^2}{\cos^2}$ $\quad 1+2x+x^2$

$\dfrac{\frac{1}{\cos}+\frac{\sin}{\cos}}{\frac{1}{\cos}-\frac{\sin}{\cos}} = \dfrac{(1+\sin)^2}{\cos^2}$ $\quad (1+\sin)(1+\sin)$

$1+\sin+\sin+\sin^2$

$= \dfrac{(1+\sin)^2}{1-\sin^2} \Rightarrow (1+\sin)(1-\sin)$

$\dfrac{\frac{1+\sin}{\cancel{\cos}}}{\frac{1-\sin}{\cancel{\cos}}} = \dfrac{(1+\sin)^2}{\cancel{(1+\sin)}(1-\sin)}$

$= \dfrac{1+\sin}{1-\sin}$

HW:

Sect. 5.2 1-3, 13-19, 23-25,

27, 29, 33-35, 37, 39